Human Exploration & Operations Mission Directorate Updates



Bill Gerstenmaier | July 24, 2012



SpaceX Demonstration





J-2X Engine Tests





NASA conducted a 260-second J-2X engine test at NASA's Stennis Space Center on June 13, 2012

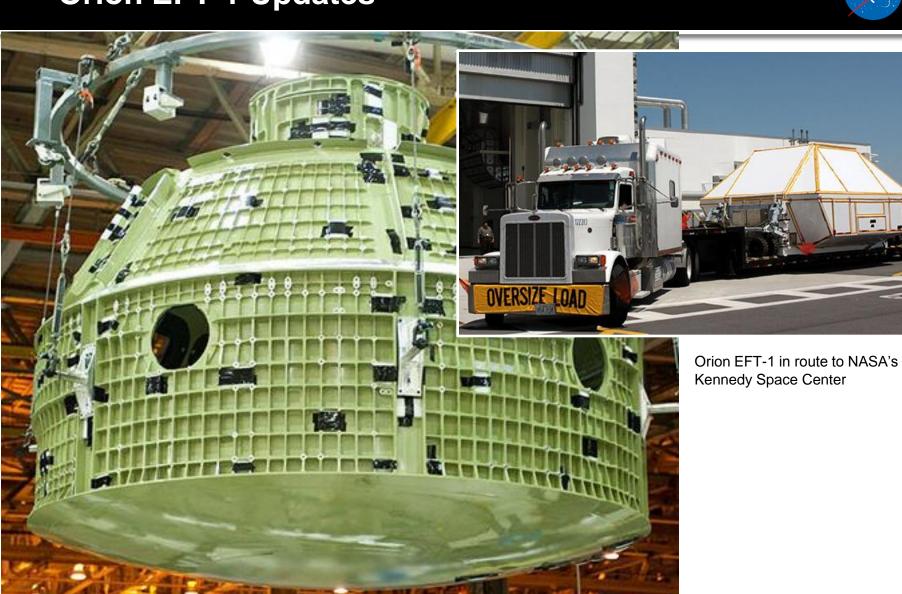
Soyuz TMA-05M Launch





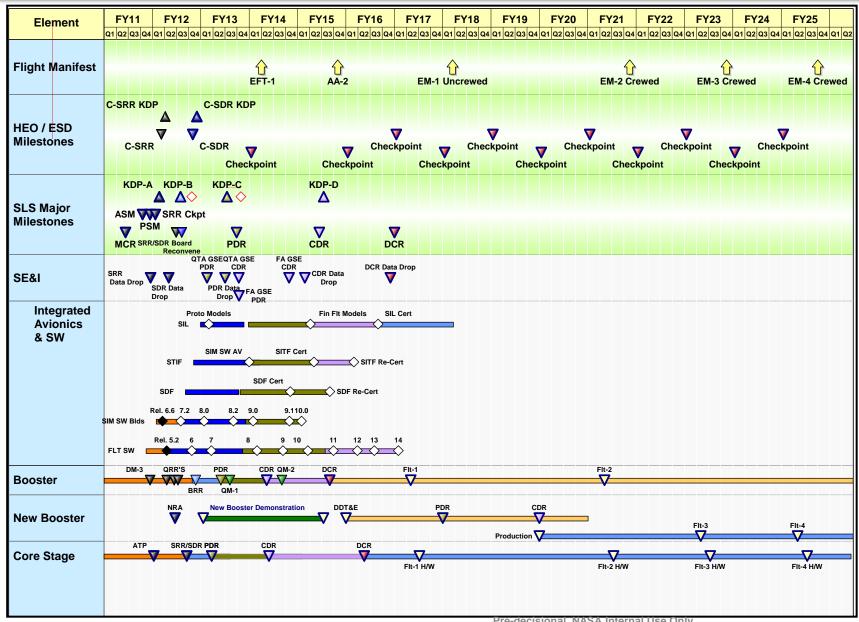
Orion EFT-1 Updates





SLS Top Level Milestone Schedule (1/3)

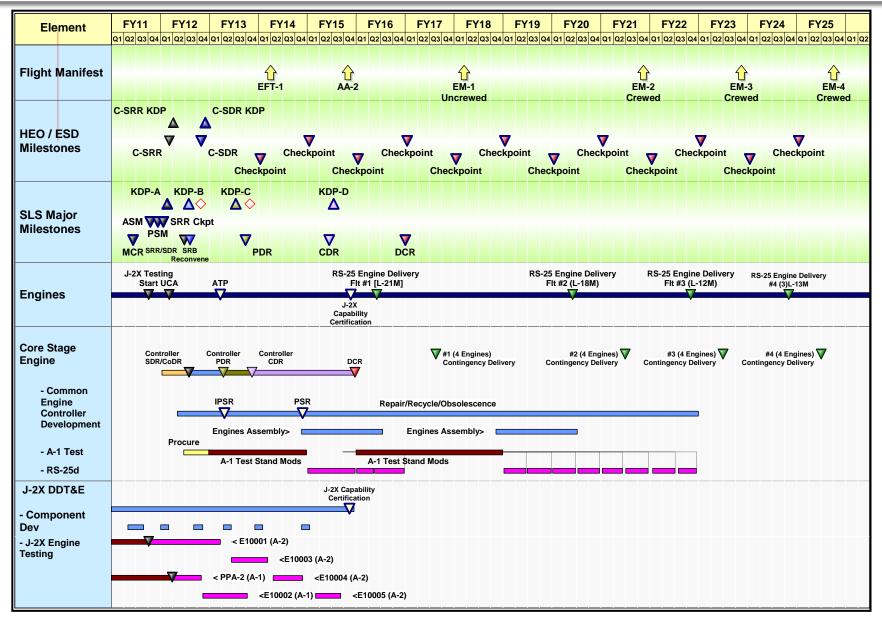




Pre-decisional, NASA Internal Use Only.

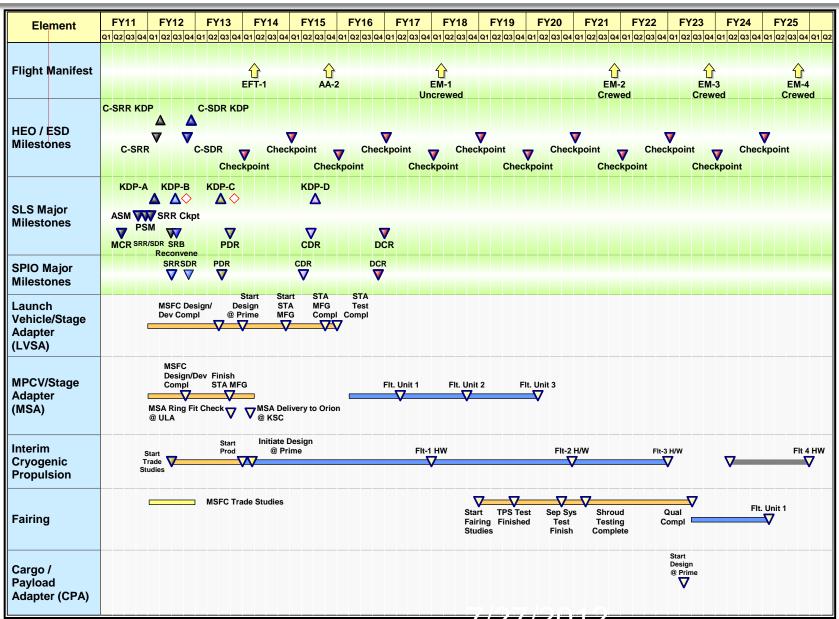
SLS Top Level Milestone Schedule (2/3)





SLS Top Level Milestone Schedule (3/3)

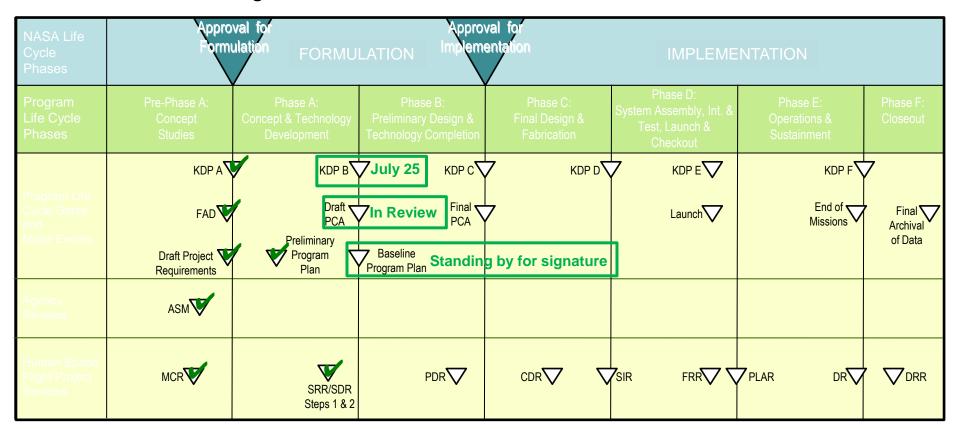




SLS Program Life Cycle



We are Following NPR 7120.5



ISS Flight Plan NASA Official: John Coggeshall For current baseline refer to Prepared by: Scott Paul Flight Planning Integration Panel (FPIP) SSP 54100 Multi-Increment Chart Updated: July 20, 2012 Planning Document (MIPD) (Pre-decisional, For Internal Use, For Reference Only) SSCN/CR: 13306 (In-Work: MIPD) 2012 2013 2014 May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr Inc 31 Inc 32 Inc 33 Inc 34 Inc 36 Inc 35 Inc 37 Inc 38 167 days 305) Crew Rotation S. Williams (CDR-33) (CDR-37 J K. Wakata (CDR-39) 168 days 120 days (295) (335) (315) 170 days 168 days A L. Parmitano Stage S/W Stage EVAs 4/27 5/17 10/17 3/19 MRM₂ 285 305 325 (SM Zenith) /17 7/1 11/12 12/7 5/15 11/15 12/1 5/31 MRM1 Port 335 (FGB 295 **8** 31S 355 375 Nadir) 7/29:8/1 12/25 12/28 2/1 2/4 DC-1/ 4/19 4/22 30:8/2 4/25 4/28 12/13 12/19 MLMA Utilization 46P 47P 48P 18 50P 6 52P RS 3R (MLM) 3/15 - 3/29 4/15,18 1/29 - 5/26 6/17 -19 11/3 3/15 3/22 10/25 3/6 3/8 8/27 SM-Aft ODP OD EVTA ATV4 ATV5 Node-2 Zenith 8/9_9/8 12/17 _ 12/29. 12d Orb-D1 Orb-2 Node-2 5/25 *5/31 10/7 10/31 4/11:5/7 6/15 7/15 7/20 8/19 #³ 10/9 11/8 12/8 1/7 12/17 1/16 Nadir 26 days 100 HTV4 SpX-4 Orb-3 HTV3 SpX-1 SpX-2 Orb-1 SpX-3 SpX-D MIPD CR 13306 N2 Fwd Solar Beta >60 06/03-06/13 08/03 -08/10 11/03 -11/11 12/31 -01/10 12/30 -01/09 06/1 -06/11 08/1. -08/09 11/2 -11/10 ITV3: MCE, SCÁN TB HTV4: MBSU, UTA, STP-H4 SpX-4: NOFBX External Cargo SpX-2: HRSGF (2) SpX-3; HDE V, OPALS SpX-D Orb-TF SpX-1 **L**A3 Orb-D1 SpX-2 Orb-HTV4 SpX-3 Orb-2 SpX-4 Orb-3 ATV5 Launch 5/22 9/29 - 10/5 12/12 12/15 3/12 4/8 6/10 7/18 8/6 10/7 12/5 2/28 Schedule N*706 N*709 Nº421 N°423 TMADAM TMADSM 51P 52P 355 53P 37S 3R (MLM) 305 328 335 50P 345 2/2 3/31 8/1 10/15 11/1 12/5 12/26 2/2 4/2 4/26 5/29 7/30 10/23 11/29 12/10 #3-8

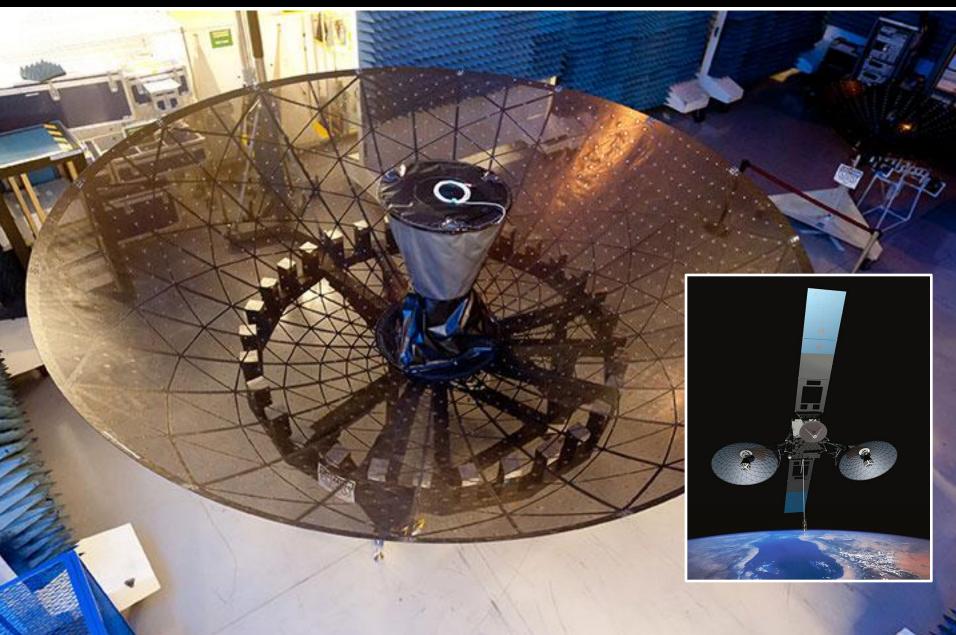
ISS Research





TDRS-K Updates





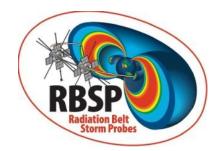
Launch Services Program - CY 2012 Highlights





June 13, 2012 - Complete





December 6, 2012





Launch Services Program



Safely fly the launches planned this fiscal year (i.e., CY2012)

- June 13, 2012 successful launch of Nuclear Spectroscopic Telescope Array (NuSTAR) on Pegasus XL from Reagan Test Site in Kwajalein, Marshall Islands
- In launch flow for Radiation Belt Storm Probes (RBSP)
 - ILC August 23, 2012, Atlas V 401 from Cape Canaveral Air Force Station (CCAFS), FL
- Tracking and Data Relay Satellite (TDRS)-K, Atlas V 401 launch from CCAFS, FL planned for December 6, 2012

Establish a plan with the Science Mission Directorate (SMD) for launching several medium-class missions in the future

- Multi-Mission RLSP for two intermediate-class SMD/NOAA missions (i.e., Geostationary Operational Environmental Satellite (GOES) R and S) awarded on April 5, 2012 to United Launch Services, LLC
 - The spacecraft will launch in October 2015 and February 2017, respectively, aboard Atlas V 541 rockets from Space Launch Complex-41 at CCAFS, FL
- Multi-Mission RLSP for three medium-class SMD missions (i.e., Soil Moisture Active-Passive (SMAP) & Orbiting Carbon Observatory-2 (OCO-2)) along with a National Oceanic & Atmospheric Administration (NOAA) mission (i.e., Joint Polar Satellite System (JPSS-1)) awarded on July 16, 2012 to United Launch Services, LLC
 - The spacecraft will launch in October 2014, July 2014 and November 2016, respectively, aboard Delta II rockets from Complex 2 at Vandenberg Air Force Base (VAFB), CA
- RLSP for one medium-class SMD/NOAA mission (i.e., Jason-3)) awarded on 7/16/12 to Space Exploration Technologies (SpaceX)
 - The spacecraft will launch in December 2014 aboard a Falcon 9 v1.0 rocket from Complex 4 at VAFB, CA
- Conducting proposal evaluations for 1 SMD small-class mission (i.e., Gravity and Extreme Magnetism Small Explorer (GEMS))
- Supporting SMD to select a launch service for the Ice, Cloud, and land Elevation Satellite-2 (ICESat-2) mission